

AMENDMENTS TO THE CLAIMS

Please amend Claims as follows. Insertions are shown underlined while deletions are ~~struck through~~.

1. (Currently amended) An apparatus for evaluating a degree of work comfort by measuring myoelectric potentials during a work activity which is performed antagonistically by a pair of left and right muscles provided in a human body in bilaterally symmetrical relation, the apparatus comprising:

a pair of detection sensors for detecting the myoelectric potentials of the pair of left and right muscles provided in the human body in bilaterally symmetrical relation, the myoelectric potentials produced by actions of the pair of the muscles of the human body during the work activity;

an amplifier for amplifying the pair of myoelectric potentials detected by the detection sensors;

a waveform processing unit for generating a synchronous contraction waveform of the pair of muscles from time-series waveforms of the pair of amplified myoelectric potentials; and

an evaluation unit for evaluating a level of the degree of comfort of the work activity ~~from~~ based on intensity information of the generated synchronous contraction waveform or ~~from~~ frequency information of the generated synchronous contraction waveform contained in a specified intensity range,

wherein the waveform processing unit performs full-wave rectification with respect to the time-series waveforms of the pair of myoelectric potentials and selects, as a signal value of the synchronous contraction waveform, a smaller value from two respective values at each time point in the time-series waveforms of the pair of myoelectric potentials that have been subjected to the full-wave rectification, thereby generating the synchronous contraction wave.

2. (Original) The apparatus for evaluating a degree of work comfort according to claim 1, wherein the evaluation unit calculates the intensity information of the generated synchronous contraction waveform or the frequency information of the generated synchronous contraction waveform at specified time intervals and evaluates the level of the degree of comfort of the work activity at the specified time intervals based on results of the calculation.

3. (Canceled)

4. (Currently Amended) The apparatus for evaluating a degree of work comfort according to claim 3 or 2, wherein the waveform processing unit performs a normalizing process with respect to the time-series waveforms of the pair of amplified myoelectric potentials by using a maximum myoelectric potential and generates the synchronous contraction waveform by using the time-series waveforms that have been subjected to the process.

5. (Currently amended) ~~The~~An apparatus for evaluating a degree of work comfort according to ~~claim 1 or 2~~, by measuring myoelectric potentials during a work activity which is performed antagonistically by a pair of left and right muscles provided in a human body in bilaterally symmetrical relation, the apparatus comprising:

a pair of detection sensors for detecting the myoelectric potentials of the pair of left and right muscles provided in the human body in bilaterally symmetrical relation, the myoelectric potentials produced by actions of the pair of the muscles of the human body during the work activity;

an amplifier for amplifying the pair of myoelectric potentials detected by the detection sensors;

a waveform processing unit for generating a synchronous contraction waveform of the pair of muscles from time-series waveforms of the pair of amplified myoelectric potentials;
and

an evaluation unit for evaluating a level of the degree of comfort of the work activity based on intensity information of the generated synchronous contraction waveform or frequency information of the generated synchronous contraction waveform contained in a specified intensity range,

wherein the waveform processing unit performs full-wave rectification with respect to the time-series waveforms of the pair of myoelectric potentials and ~~designates~~ calculates, as a signal value of the synchronous contraction waveform, a geometric mean value of two respective signal values at each-given time of time point in the time-series waveforms of the pair of myoelectric potentials that have been subjected to the full-wave rectification-as a signal value of the synchronous contraction waveform, thereby generating the synchronous contraction wave form.

6. (Previously presented) The apparatus for evaluating a degree of work comfort according to claim 1 or 2, wherein the work activity comprises steering of a wheel in driving a vehicle.

7. (Previously presented) The apparatus for evaluating a degree of work comfort according to claim 1 or 2, wherein the pair of muscles comprise deltoid muscles positioned in shoulders of the human body.

8. (Currently amended) A method of evaluating a degree of work comfort by measuring myoelectric potentials during a work activity which is performed antagonistically by a pair of left and right muscles provided in a human body in bilaterally symmetrical relation, the method comprising:

a step of detecting the myoelectric potentials of the pair of left and right muscles provided in the human body in bilaterally symmetrical relation, the myoelectric potentials produced by actions of the pair of the muscles of the human body during the work activity;

~~and a step of amplifying the pair of myoelectric potentials;~~

a step of generating a synchronous contraction waveform of the pair of muscles from time-series waveforms of the pair of amplified myoelectric potentials; and

a step of evaluating a level of the degree of comfort of the work activity ~~from~~based on intensity information of the generated synchronous contraction waveform or ~~from~~ frequency information of the generated synchronous contraction waveform of the generated synchronous contraction waveform contained in a specified intensity range,

wherein the step of generating the synchronous contraction waveform includes performing full-wave rectification with respect to the time-series waveforms of the pair of myoelectric potentials and selecting, as a signal value of the synchronous contraction waveform, a smaller value from two respective values at a each time point in the time-series waveforms of the pair of myoelectric potentials that have been subjected to the full-wave rectification.

9. (Original) The method of evaluating a degree of work comfort according to claim 8, wherein the step of evaluating the level of the degree of comfort of the work activity includes calculating the intensity information or the frequency information of the generated synchronous contraction waveform at specified time intervals and evaluating the level of the degree of comfort of the work activity at the specified time intervals based on results of the calculation.

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10. (Canceled)

11. (Currently amended) The method of evaluating a degree of work comfort according to claim 4 or 9, wherein, in the step of generating the synchronous contraction waveform, the waveform processing unit performs a normalizing process with respect to the time-series waveforms of the pair of amplified myoelectric potentials by using a maximum myoelectric potential and generates the synchronous contraction waveform by using the time-series waveforms that have been subjected to the process.

12. (Currently amended) The method of evaluating a degree of work comfort according to claim 8 or 9, by measuring myoelectric potentials during a work activity which is performed antagonistically by a pair of left and right muscles provided in a human body in bilaterally symmetrical relation, the method comprising:

a step of detecting the myoelectric potentials of the pair of left and right muscles provided in the human body in bilaterally symmetrical relation, the myoelectric potentials produced by actions of the pair of the muscles of the human body during the work activity;

a step of amplifying the pair of myoelectric potentials;

a step of generating a synchronous contraction waveform of the pair of muscles from time-series waveforms of the pair of amplified myoelectric potentials; and

a step of evaluating a level of the degree of comfort of the work activity based on intensity information of the generated synchronous contraction waveform or frequency information of the generated synchronous contraction waveform of the generated synchronous contraction waveform contained in a specified intensity range,

wherein the step of generating the synchronous contraction waveform includes performing full-wave rectification with respect to the time-series waveforms of the pair of myoelectric potentials and ~~designating~~ calculating, as a signal value of the synchronous contraction waveform, a geometric mean value of two respective signal values at each given time of time point in the time-series waveforms of the pair of myoelectric potentials that have been subjected to the full-wave rectification as a signal value of the synchronous contraction waveform.

13. (Previously presented) The method of evaluating a degree of work comfort according to claim 8 or 9, wherein the work activity comprises steering of a wheel in driving a vehicle.

14. (Previously presented) The method of evaluating a degree of work comfort according to claim 8 or 9, wherein the pair of muscles comprise deltoid muscles positioned in shoulders of the human body.

15. (New) The apparatus for evaluating a degree of work comfort according to claim 5, wherein the evaluation unit calculates the intensity information of the generated synchronous contraction waveform or the frequency information of the generated synchronous contraction waveform at specified time intervals and evaluates the level of the degree of comfort of the work activity at the specified time intervals based on results of the calculation.

16. (New) The apparatus for evaluating a degree of work comfort according to claim 5 or 15, wherein the work activity comprises steering of a wheel in driving a vehicle.

17. (New) The apparatus for evaluating a degree of work comfort according to claim 5 or 15, wherein the pair of work muscles comprise deltoid muscles positioned in shoulders of the human body.

18. (New) The method of evaluating a degree of work comfort according to claim 12, wherein, the step of evaluating the level of the degree of comfort of the work activity includes calculating the intensity information or the frequency information of the generated synchronous contraction waveform at specified time intervals and evaluating the level of the degree of comfort of the work activity at the specified time intervals based on results of the calculation.

19. (New) The method of evaluating a degree of work comfort according to claim 12 or 18, wherein the work activity comprises steering of a wheel in driving a vehicle.

20. (New) The method of evaluating a degree of work comfort according to claim 12 or 18, wherein the pair of muscles comprise deltoid muscles positioned in shoulder of the human body.